



National Headquarters

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PP-NV-BSSG-15-03

March 13, 2015

Director (210)
Bureau of Land Management
Attn: Protest Coordinator
PO Box 71383
Washington, DC 20024

Ladies and Gentlemen:

Defenders of Wildlife was pleased to review the Greater Sage-grouse Bi-state Distinct Population Segment Forest Plan Amendment Final Environmental Impact Statement (FEIS). The Bureau of Land Management (BLM) will publish a Record of Decision (ROD) on the FEIS to amend the Carson City District and Tonopah Field Office resource management plans with new management prescriptions to conserve the bi-state Distinct Population Segment of greater sage-grouse (bi-state sage-grouse). We are concerned, however, that some conservation measures in the proposed alternative will fail to meet this purpose and need for the FEIS. Defenders respectfully submits the following protest with the intent of improving those measures in the ROD.

Please direct correspondence related to this protest to:

Mark Salvo
Director, Federal Lands Conservation
Defenders of Wildlife
1130 17th Street NW
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202/772-0229

Bi-State Sage-Grouse

The bi-state sage-grouse is a unique subpopulation of greater sage-grouse (*Centrocercus urophasianus*) that inhabits sagebrush steppe on the border of east-central California and southwestern Nevada. Research indicates that, genetically, the bi-state population is at least as different from greater sage-grouse as are Gunnison sage-grouse, which were designated a separate species from greater sage-grouse in 2000 (Oyler-McCance et al. 2005).

Aside from their distinct genetic traits, bi-state grouse appear and behave as other sage-grouse, and have the same habitat requirements. The bi-state population occurs at the periphery of greater sage-grouse range, occupying an especially fragile area of sagebrush steppe. The bi-state's limited range and small population make them particularly vulnerable to landscape disturbances. At present, only about 5,000 bi-state sage-grouse remain from a historic population that might have once numbered

more than twice that number (78 Fed. Reg. 64362). Many factors have contributed to the population's decline, including livestock grazing, invasive species, unnatural fire, mining, off-road vehicle use and other effects that eliminate and degrade sagebrush habitat (FEIS: 8, fn. 1, *citing* Bi-state Executive Oversight Committee for the Conservation of Greater Sage-grouse (2012); FEIS: 85, Table 3-9).

In 2010, the U.S. Fish and Wildlife Service (FWS) determined that the bi-state sage-grouse were "warranted, but precluded" for listing under the Endangered Species Act (ESA) (78 Fed. Reg. 64358). Among other concerns, FWS found a lack of adequate regulatory mechanisms to conserve bi-state sage-grouse and their habitat as a factor supporting listing. As the FEIS observed, FWS concluded that "existing regulatory mechanisms to protect sage grouse and their habitats in the Bi-state area '...afford sufficient discretion to the decision makers as to render them inadequate to ameliorate the threats to the Bi-state Distinct Population Segment'" (FEIS: 1).

FWS subsequently proposed to list the bi-state sage-grouse as "threatened" under the ESA with more than 1.8 million acres of critical habitat in October 2013 (78 Fed. Reg. 64358; 78 Fed. Reg. 64328). The agency confirmed its previous finding that various land uses and related effects, as well as a lack of adequate regulatory mechanisms to conserve the population continue to threaten bi-state sage-grouse (78 Fed. Reg. 64358).

Purpose and Need for the FEIS

The BLM manages about 223,937 acres of bi-state habitat in the Carson City and Tonopah Field offices (FEIS: 1) and an additional 1,477,681 acres within the larger planning area for the FEIS (FEIS: 4, Table 3-1). All bi-state sage-grouse habitat is considered priority habitat for the species (FEIS: 7); there is no delineation of "general" and "priority" habitat for bi-state sage-grouse as there is for other sage-grouse planning efforts (FEIS: 7).

To address FWS's finding on bi-state sage-grouse, the BLM proposes to amend the Carson City District and Tonopah Field Office resource management plans to "conserve, enhance, and/or restore habitats to provide for the long-term viability" of the population (FEIS: abstract; 8; 9).

Opportunities for Improvement

Defenders of Wildlife outlined science-based measures to protect and recover bi-state sage-grouse in comments on the Greater Sage-Grouse Bi-State Distinct Population Segment Forest Plan Amendment and Draft Environmental Impact Statement (January 17, 2014) (DEIS) and the Greater Sage-grouse Bi-state Distinct Population Segment Forest Plan Amendment Revised Draft Environmental Impact Statement (October 9, 2014) (Revised DEIS). These included conservation prescriptions for livestock grazing management, invasive species control, and development in sage-grouse habitat.

We appreciate that the FEIS incorporates many of the management recommendations and references included in our comments, but we are confused about the apparent disconnect between the best available science cited in both the FEIS and our comments, and certain management prescriptions included in the BLM's proposed alternative. We are concerned that some of these measures are inadequate to meet the purpose and need for the FEIS.

- **Grazing management under the proposed alternative is unlikely to achieve desired habitat conditions for sage-grouse.**

The FEIS includes a table of desired habitat conditions for sage-grouse (FEIS: 15-16, Table 2-1), which the BLM would seek to achieve through management and restoration of bi-state sage-grouse habitat (FEIS: 13) (although it is unclear if the BLM's *proposed alternative* (as presented in Table 2-5) adopts all desired conditions in Table 2-1, which is only referenced in connection to Alternative B (FEIS: 13)). A desired condition for nesting/breeding habitat is that "[p]erennial grass height provide[] overhead and lateral concealment from predators," citing Connelly et al. 2000; Stiver et al. [in press]; Connelly et al. 2003; Hagen et al. 2007 (FEIS: 15, Table 2-1). A desired condition for brood-rearing/summer habitat is that "[g]rass/forb height is greater than 7 inches (Hagen et al. 2007)" (FEIS: 16, Table 2-1).

The desired condition for nesting/breeding habitat should require minimum 7-inch grass height, same as brood-rearing/summer habitat. As we stated in our comments on the Revised DEIS:

Sage-grouse management guidelines recommend that grazing maintain a minimum of 7 inches (18 cm) grass height in nesting and brood-rearing-rearing habitat (Connelly et al. 2000; Hagen et al. 2007; *see also* Braun et al. 2005 and Kaczor 2008). USFWS supports the 7-inch standard for the Bi-State DPS (BSSG Assessment 2013: 58-59). Gregg et al. (1994: 165) noted that "[a]nd management practices that decrease tall grass and medium height shrub cover at potential nest sites may be detrimental to sage grouse populations because of increased nest predation. ... Grazing of tall grasses to <18 cm would decrease their value for nest concealment. ... Management activities should allow for maintenance of tall, residual grasses or, where necessary, restoration of grass cover within these stands." Because sage-grouse nesting generally begins prior to the onset of the growing season, residual vegetation from the previous year dictates available hiding cover (Cagney et al. 2010). Consequently, management should ensure that grass height averages 7 inches after the growing season to support sage-grouse nesting the following year.

Holloran et al. (2005: 648) documented the importance of herbaceous cover, including residual grass, to sage-grouse nesting success and concluded that "annual grazing in nesting habitat, regardless of the timing, could negatively impact the following year's nesting success [by reducing residual vegetation]." Tall, dense, vegetational cover provides scent, visual and physical barriers to predation on nesting sage-grouse hens, sage-grouse nests and chicks, and may enhance nest success (Gregg et al. 1994; Rebholz 2007; Herman-Brunson et al. 2009). Hagen et al. (2007) conducted a quantitative meta-analysis of existing research on greater sage-grouse nesting and brood-rearing habitat and confirmed that female sage-grouse typically select nesting sites with greater sagebrush cover and grass height compared to random locations, and that brood areas usually had less sagebrush, taller grasses, and greater forb and grass cover than at random sites.

Some of the same references cited in the FEIS in support of the minimum grass height for brood-rearing/summer habitat also recommend managing for 7-inch grass height in nesting/breeding habitat.

Recommended change: Explicitly state in the ROD that the BLM's proposed alternative will manage for all desired conditions in Table 2-1. Add 7-inch minimum grass height as a desired condition for nesting/breeding habitat.

While the desired habitat conditions in Table 2-1 are generally in accord with the best available science and would probably benefit bi-state sage-grouse, separate and contradictory grazing prescriptions in the BLM's proposed alternative may prevent the agency from achieving those desired conditions. The proposed alternative would require that "grazing permits, annual operating instructions, or other appropriate mechanism for livestock management... include terms, conditions, and direction to move toward or maintain bi-state DPS habitat desired conditions," presumably those listed in Table 2-1 (FEIS: 30, Table 2-5, B-RP-S-01). But the BLM would also manage grazing in accordance with a separate utilization schedule (Table 2-6; also Table 3-14) (FEIS: 30, Table 2-5, B-RU-S-02), which fails to require a minimum grass height in sage-grouse habitat (as called for in Table 2-1), except in riparian zones, where livestock would only be removed when 4-6 inches of stubble height remained (FEIS: 46, Table 2-6; FEIS 105, Table 3-14). The conflict between achieving the desired condition for brood-rearing/summer habitat (which includes riparian areas)—7 inches grass height—and the maximum utilization rate allowed in riparian areas in Table 2-6 is obvious. It is unclear which prescription controls in the likely case that grazing has compromised desired conditions in Table 2-1, but hasn't exceeded utilization standards in Table 2-6 (and Table 3-14). The FEIS assumes agencies can manage for both "residual cover" and allowable utilization simultaneously (FEIS: 106), although it also admits there is no correlation between utilization and grass height (FEIS: 281).

It is also troublesome that the only measure identified for grazing in upland habitats is percent utilization of vegetative communities, including <35% - <45% of herbaceous vegetation in big sagebrush communities. Besides being notoriously difficult to monitor and measure, these utilization rates are too high to maintain healthy, diverse, vegetative communities with sufficient food and cover for sage-grouse. As we stated in our comments on the DEIS, "[u]tilization levels should not exceed 25 percent annually on uplands, meadows, flood plains and riparian habitat (Holechek et al. 2010; BLM & USFS 1994)." Holechek et al. (2010: 290), citing Gregg et al. (1994) and Sveum et al. (1998) (also referenced in the FEIS at 106), noted that grazing must be kept at conservative levels (25 to 35 percent use) "for high nesting success by sage-grouse." Braun (2006, unpublished; cited in the FEIS) similarly recommended limiting grazing use to 25-30 percent utilization. The FEIS, citing Holechek (2011), recognizes the negative effects of over-utilization on soil and vegetative communities (FEIS: 102).

Numerous references have settled on a general 25 percent harvest coefficient for allocating forage for livestock (Holechek et al. 2010: 157, citing Troxel and White 1989; Galt et al. 2000; Lacey et al. 1994; Johnston et al. 1996; White and McGinty 1997; NRCS 1997). Although this rate may be more conservative than typically prescribed for light grazing, it allows both forage species and livestock to maximize their productivity, accommodates errors in forage production estimates, accounts for the potential effects of drought, and supports multiple use values (Holechek et al. 2010). Holechek et al. (2010: 157) also noted that, because most ranchers have difficulty monitoring and measuring annual grazing utilization (and the BLM doesn't regularly monitor and collect utilization information), use of grazing coefficients higher than 25 percent "invariably leads to land degradation...when drought occurs because of rancher reluctance [to reduce livestock numbers]." Limiting livestock grazing to 25 percent utilization would help support sage-grouse habitat objectives, such as maintaining a minimum stubble height (*see* Holechek et al. 2010: 164; Manier et al. 2013: 97). An unpublished case

study of the Antelope Springs Allotment in southern Idaho demonstrates that ranching operations can be successful and improve sage-grouse habitat using a 20 percent utilization standard (Steubner 2013, unpublished).

Recommended change: Clarify that utilization standards in Table 2-6 (and Table 3-14) are subject to maintaining or restoring desired habitat conditions in Table 2-1 in ROD. Limit utilization of herbaceous species in upland habitat to 25 percent annually.

- **The use of livestock to control annual grasses (cheatgrass) is unproven, unlikely to achieve desired habitat conditions, and may contribute to continued degradation of sage-grouse habitat.**

The BLM's proposed alternative would authorize the agency to use livestock to "target removal of cheatgrass or other vegetation hindering bi-state DPS objectives to move habitat toward desired habitat conditions (Table 2-1) when restoring habitat and or mitigating disturbance. Sheep, goats, or cattle may be used as long as the animals are intensely managed and removed when the utilization of desirable species reaches 35%" (FEIS: 33, Table 2-5, B-Weed G-01).

There is little scientific support for using domestic livestock to control cheatgrass. As the FEIS noted:

Recent research suggests that cattle grazing, even at the highest intensities, does not reduce cheatgrass cover. Increasing intensity of cattle grazing results in a decrease in the remnant native perennial grasses and biological soil crusts which promotes an increase in the magnitude of cheatgrass dominance (Reisner 2010; Reisner et al. 2013). While cattle grazing may not be effective for cheatgrass control, many species of noxious and invasive weeds can be controlled with specifically designed grazing strategies using cattle, sheep, and goats (Davison et al. 2005; Olson 1999) (FEIS: 110).

The BLM advised against using livestock to control cheatgrass in the Idaho and Southwestern Montana Greater Sage-Grouse Draft Land Use Plan Amendment and Environmental Impact Statement, as Defenders quoted in our comments on the Revised DEIS:

Intensive livestock grazing is often suggested for controlling cheatgrass competition. Although targeted grazing may have some applications for fuels management, it is not effective in reducing cheatgrass competition (Hempy-Mayer and Pyke 2008). During the short time when cheatgrass is highly palatable in the spring, a sufficient number of livestock cannot be concentrated on a small enough area to reduce the cheatgrass seed significantly or reduce cheatgrass seed lying on the soil surface. In addition, this type of grazing can be detrimental to remaining perennial grasses, opening the site up for further cheatgrass expansion in the future. (Idaho: 3-64 – 3-65)

In fact, the best available science recommends limiting livestock grazing where it may contribute to the spread of cheatgrass. Defenders excerpted those recommendations in our comments on the Revised DEIS:

Reisner et al. (2013) found that, even after controlling for other factors that may contribute to the spread of cheatgrass, there was a strong correlation between grazing and cheatgrass incursion.

If the goal is to conserve and restore resistance of [big sagebrush] systems, managers should consider maintaining or restoring: (i) high bunchgrass cover and structure characterized by spatially dispersed bunchgrasses and small gaps between them; (ii) a diverse assemblage of bunchgrass species to maximize competitive interactions with *B. tectorum* in time and space; and (iii) biological soil crusts to limit *B. tectorum* establishment. Passive restoration by reducing cumulative cattle grazing may be one of the most effective means of achieving these three goals. (Reisner et al. 2013: 1)

Recommended change: Do not allow use of livestock to control cheatgrass in the ROD.

- **It is unclear what standard BLM's proposed alternative adopts for constructing tall structures near sage-grouse leks.**

The BLM's proposed alternative would prohibit installation of "tall structures that could serve as predator perches within 2 miles of a lek" (FEIS: 23, Table 2-5, B-LUSU-S-01). The FEIS also repeatedly references standard C-LUSU-S-04 in the BLM proposed alternative (FEIS: 23, 24, 31, 33, 40, Table 2-5), which prohibits construction of "tall structures that could serve as predator perches within 4 miles of an active or pending lek" (FEIS: 23, Table 2-5, C-LUSU-S-04, emphasis added).

The 4-mile lek buffer is more protective of sage-grouse than the 2-mile standard, and accords with other prescriptions on surface disturbance in sage-grouse habitat in the FEIS and Defenders' comments on the DEIS ("[p]rohibit new surface disturbance in priority sage-grouse habitat" and, wherever possible, "buffer active sage-grouse leks against surface disturbance or occupancy by 4 miles (SGNTT 2011: 23))."

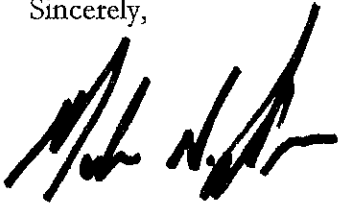
Recommended change: Clarify which standard the BLM's proposed alternative will adopt for construction of tall structures near sage-grouse leks. Adopt a 4-mile lek buffer for tall structures in sage-grouse habitat.

The FEIS concludes that any of the proposed action alternatives (including the BLM's proposed alternative) "would provide the regulatory mechanisms needed to respond to the USFWS's publishing of a 'warranted, but precluded' ESA listing petition 12-month finding for the bi-state DPS and improve the ability of the Forest Service and BLM to conserve, enhance, and/or restore sagebrush and associated habitats to provide for the long-term viability of the bi-state DPS" (FEIS: ii). We are concerned that key measures the BLM's proposed alternative would prevent the land

managers from achieving these goals. We hope the agency will accept our recommended changes to improve the ROD to conserve sage-grouse and its habitat.

Thank you for your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read 'Mark N. Salvo', with a stylized, cursive script.

Mark N. Salvo
Director, Federal Lands Conservation

Attachments

Defenders of Wildlife Comments on the Greater Sage-Grouse Bi-State Distinct Population Segment Forest Plan Amendment and Draft Environmental Impact Statement (January 17, 2014)

Defenders of Wildlife Comments on the Greater Sage-grouse Bi-state Distinct Population Segment Forest Plan Amendment Revised Draft Environmental Impact Statement (October 9, 2014)



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Comments submitted via electronic mail to jwinfrey@fs.fed.us

January 17, 2014

Jim Winfrey
Humboldt-Toiyabe National Forest
1200 Franklin Way
Sparks, Nevada 89431

RE: Comments on the Greater Sage-Grouse Bi-State Distinct Population Segment Forest Plan Amendment and Draft Environmental Impact Statement

Dear Mr. Winfrey:

I am pleased to submit comments on behalf of Defenders of Wildlife (Defenders) on the Greater Sage-Grouse Bi-State Distinct Population Segment Forest Plan Amendment and Draft Environmental Impact Statement (EIS No. 20130246) (draft plan) prepared by the Humboldt-Toiyabe National Forest, with the Bureau of Land Management as cooperating agency. Defenders is a national, non-profit, public interest conservation organization with more than one million members and supporters. Defenders is deeply engaged in species and habitat conservation on public lands, including greater sage-grouse and sagebrush steppe.

We appreciate the Forest Service preparing the draft plan to conserve bi-state sage-grouse. Unfortunately, based on our extensive involvement with other sage-grouse planning efforts, we are concerned that the document fails to analyze and adopt adequate conservation measures consistent with the best available science to conserve sage-grouse and their habitat. We identify some of the most significant problems with the draft plan below.

Bi-State Sage-Grouse

The bi-state distinct population of greater sage-grouse (bi-state sage-grouse) is a genetically unique subpopulation of greater sage-grouse (*Centrocercus urophasianus*) that inhabits sagebrush steppe on the border of east-central California and southwestern Nevada. Research indicates that, genetically, the bi-state population is at least as different from greater sage-grouse as are Gunnison sage-grouse, which were designated a separate species from greater sage-grouse in 2000. Oyler-McCance et al. 2005.

Aside from their distinct genetic traits, bi-state grouse appear and behave as other sage-grouse, and have the same habitat requirements. The bi-state population occurs at the periphery of greater sage-grouse range, occupying an especially fragile area of sagebrush steppe. The bi-state's limited range and small population make them particularly vulnerable to landscape disturbances. At present, only

about 5,000 bi-state sage-grouse remain from a historic population that might have once numbered more than twice that number. 78 Fed. Reg. 64362. Many factors have contributed to the population's decline, including livestock grazing, invasive species, unnatural fire, mining, off-road vehicle use and other effects that eliminate and degrade sagebrush habitat. *See* draft plan: 2, fn. 1.

In 2010, the U.S. Fish and Wildlife Service (FWS) determined that the bi-state sage-grouse were "warranted, but precluded" for listing under the Endangered Species Act (ESA). 78 Fed. Reg. 64358. Among other concerns, FWS found a lack of adequate regulatory mechanisms to conserve bi-state sage-grouse and their habitat as a factor supporting listing. As the draft plan observed, FWS concluded that "existing regulatory mechanisms to protect sage grouse and their habitats in the Bi-state area '...afford sufficient discretion to the decision makers as to render them inadequate to ameliorate the threats to the Bi-state Distinct Population Segment'" (draft plan: 1).

FWS subsequently proposed to list the bi-state sage-grouse as "threatened" under the ESA with more than 1.8 million acres of critical habitat in October 2013 78 Fed. Reg. 64358; 78 Fed. Reg. 64328. The agency confirmed its previous finding that various land uses and related effects, and a lack of adequate regulatory mechanisms to conserve the population continue to threaten bi-state sage-grouse. 78 Fed. Reg. 64358.

Greater Sage-Grouse Bi-State Distinct Population Segment Forest Plan Amendment and Draft Environmental Impact Statement

The stated purpose of the draft plan is "to incorporate management direction to conserve, enhance, and restore habitat for the Bi-state Distinct Population Segment of the Greater Sage-grouse" (draft plan: 1) in land use plans affecting approximately 648,800 acres of sage-grouse habitat on Forest Service and Bureau of Land Management (BLM) administrated lands in the planning area in Nevada and California (draft plan: i; 1). In drafting the plan amendment, the Forest Service and BLM were also responding to the FWS's 2010 determination that the bi-state sage-grouse are "warranted, but precluded" for protection under the ESA (draft plan: 1). However, the draft plan was developed and released prior to FWS' subsequent proposal to list and designate critical habitat for bi-state sage-grouse under the Endangered Species Act. The listing proposal should affect how federal land management agencies plan conservation of bi-state sage-grouse.

Recommendation: the Forest Service should reconsider the draft plan in light of the listing proposal for bi-state sage-grouse, addressing, as appropriate, information in FWS's finding and incorporating the latest science on sage-grouse and sagebrush steppe. As part of this reevaluation, the Forest Service should also conference with FWS about the potential effects of the draft plan on bi-state sage-grouse, as advised in the ESA (16 U.S.C. 1536(a)(4), "Each Federal agency shall confer with the Secretary on any agency action which is likely to jeopardize the continued existence of any species proposed to be listed under section 1533 of this title or result in the destruction or adverse modification of critical habitat proposed to be designated for such species.")

The draft plan only analyzed two management alternatives for consideration in the final plan and environmental impact statement (EIS): a no action alternative and the preferred alternative. Five additional alternatives were considered, but eliminated from further consideration. We agree with the draft plan that two of the discarded five alternatives were unviable—one would have changed all

Forest Service management standards to guidelines (which would only weaken the proposed conservation scheme for sage-grouse) and the other would have redrawn the habitat map for bi-state sage-grouse to exclude areas with a high degree of development, limiting the effects of conservation measures. While the other rejected alternatives also had problems, we are concerned that the draft plan failed to advance more than two alternatives, including only one action alternative, for analysis.

As evidenced by the multitude of plans released as part of the National Greater Sage-Grouse Planning Strategy, including the Nevada/Northeastern California Sub-Regional Greater Sage-Grouse Draft Land Use Plan Amendment/Environmental Impact Statement, a reasonable range of alternatives for conserving sage-grouse on public lands is much broader than the two included in the draft bi-state plan. Alternatives in these plans consider an array of management schemes, including designation of sagebrush reserves, more or less restrictive conservation measures, and proposed habitat restoration that informs and improves analysis of the preferred alternatives.

The failure to analyze a reasonable range of alternatives in an EIS violates the National Environmental Policy Act (NEPA). There are three main criteria for determining the adequacy of an EIS: (1) whether the agency has taken an objective, good-faith, hard look at the environmental consequences of the proposed action and alternatives; (2) whether the agency provides sufficient detail to allow those who did not participate in preparing the EIS to understand and consider pertinent environmental influences involved; and (3) whether the agency includes an explanation of alternatives in the EIS that sufficiently permits a reasoned choice among different courses of action. Miss River Basin Alliance v. Westphal, 230 F.3d 170, 174 (5th Cir. 2000). It is this last criterion – the alternatives analysis – that is considered the heart of an EIS. 40 C.F.R. § 1502.14. Federal agencies must “rigorously explore and objectively evaluate all reasonable alternatives” including alternatives that are “not within the [lead agency’s] jurisdiction.” *Id.*; *see also Utahns for Better Transp. v. U.S. Dep’t. of Transp.*, 305 F.3d 1152, 1166 (10th Cir. 2002) (internal quotations omitted); Citizens’ Comm. to Save Our Canyons v. U.S. Forest Serv., 297 F.3d 1012, 1030 (10th Cir. 2002); Custer Cnty. Action Ass’n v. Garvey, 256 F.3d 1024, 1039-40 (10th Cir. 2001). It is through a proper alternative analysis that an agency is aided in making a reasoned choice by assuring sufficient discussion of all relevant issues and opposing viewpoints. *See Save Our Canyons*, 297 F.3d at 1030; *see also Colo. Env’tl. Coal.*, 185 F.3d at 1171. Thus, when an alternative meets the purpose and need of the proposed action, it must be considered by the agency in the EIS. *See* 40 C.F.R. § 1502.13; Custer Cnty., 256 F.3d at 1041.

While an agency is not obligated to consider every possible alternative suggested, no matter how “remote, speculative ... impractical, or ineffective,” Custer Cnty., 256 F.3d at 1039-40 (citation omitted), the selection of alternatives is bound only by a “rule of reason” and some notion of “practicality.” *See e.g. id.*; Utahns, 305 F.3d at 1163; Davis v. Mineta, 302 F.3d 1104, 1120 (10th Cir. 2002); Airport Neighbors Alliance, Inc. v. United States, 90 F.3d 426, 432 (10th Cir. 1996).

Recommendation: the Forest Service should develop and analyze additional management alternatives in the draft plan. The agency could adapt alternatives considered in the Nevada/Northeastern California Sub-Regional Greater Sage-Grouse Draft Land Use Plan Amendment/Environmental Impact Statement for the bi-state plan, which are a reasonable range of alternatives for conserving sage-grouse and their habitat on public lands. Analyzing additional alternatives would ensure compliance with NEPA and improve the preferred alternative in the final EIS.

We are also concerned that the draft plan fails to consider some new and best available science on sage-grouse. NEPA requires agencies to use "high quality" information in planning (40 C.F.R. § 1500.1(b)) and the Forest Service's new planning rule requires use of best available science in land use planning. 77 Fed. Reg. 21162. The BLM, a cooperating agency on the draft plan, is also required to "obtain and use the best available information deemed necessary to evaluate the status of special status species in areas affected by land use plans" (BLM Manual 6840.22A) (*see also* BLM NEPA Handbook H-1790-1, 6.8.1.2 (January 2008), "Use the best available science to support NEPA analyses...").

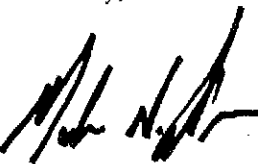
Recommendation: new, important information was published simultaneous to development of the draft plan. The Forest Service should consider best available science on sage-grouse in accordance with agency policy, including the references in Appendix A, which update information on sage-grouse tolerance of anthropogenic disturbance and disruptive activities, and the direct and indirect effects of land uses on sage-grouse habitat.

Finally, we are concerned that the proposed alternative fails to prescribe certain limits on land use and development or require land management practices that the best available science indicates are necessary for conserving sage-grouse. As the Forest Service and BLM have acknowledged in draft plans released as part of the National Sage-Grouse Planning Strategy, and as recommended in the BLM's Sage-Grouse National Technical Team (SGNTT 2011), conservation plans should adopt strict caps on development and disturbance in priority sage-grouse habitat, protect sage-grouse leks with no surface occupancy buffers, and seasonally restrict anthropogenic activities to avoid disturbing nesting and brood-rearing sage-grouse. The proposed alternative does not prescribe development or disturbance restrictions in priority habitat or standard lek buffers, and seasonal limitations are undefined. It appears that many of these decisions are deferred to future project-level planning.

Recommendation: the Forest Service should analyze and adopt restrictions on development density and disturbance, protective lek buffers and other land management prescriptions, define seasonal limitations on disruptive activities in sage-grouse nesting and brood-rearing habitat, and require other science-based measures, as appropriate, in the draft plan. These prescriptions would then apply to project-level planning, ensuring that tiered plans require the same, adequate protections for sage-grouse throughout the planning area. Recommended prescriptions for conserving and restoring sage-grouse are included in Appendix B.

We urge the Forest Service to improve the draft plan so that it can achieve its purpose of restoring, enhancing and conserving habitat for bi-state sage-grouse. Thank you for this opportunity to submit comments on the draft plan and environmental impact statement.

Sincerely,



Mark N. Salvo
Director, Federal Lands Conservation

References

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Appendix A

Beschta, R. L., D. L. Donahue, D. A. DellaSala, J. J. Rhodes, J. R. Karr, M. H. O'Brien, T. L. Fleischner, C. Deacon-Williams, Cindy. 2012. Adapting to climate change on western public lands: addressing the ecological effects of domestic, wild, and feral ungulates. Environmental Management, available at http://fes.forestry.oregonstate.edu/sites/fes.forestry.oregonstate.edu/files/PDFs/Beschta/Beschta_2012EnvMan.pdf.

- Domestic livestock and other ungulates alter vegetation, soils, hydrology, and wildlife species composition and abundances that exacerbate the effects of climate change on western landscapes. Removing or reducing livestock grazing across large areas of public land would alleviate a widely recognized and long-term stressor and make ecosystems less susceptible to the effects of climate change.

Blickley, J. L., K. R. Word, A. H. Krakauer, J. L. Phillips, S. N. Sells, C. C. Taff, J. C. Wingfield, G. L. Patricelli. 2012. Experimental chronic noise is related to elevated fecal corticosteroid metabolites in lekking male greater sage-grouse (*Centrocercus urophasianus*). PLoS ONE 7(11): e50462. doi:10.1371/journal.pone.0050462.

- Anthropogenic noise from energy development and roads can cause greater sage-grouse to avoid otherwise suitable habitat and increase stress responses in birds that do remain, which could affect disease resistance, survival and reproductive success. The effects of noise from many common activities in the sagebrush biome significantly expands the human footprint on the landscape and impacts on sage-grouse.

Copeland, H. E., A. Pocewicz, D. E. Naugle, T. Griffiths, D. Keinath, J. Evans, J. Platt. 2013. Measuring the effectiveness of conservation: a novel framework to quantify the benefits of sage-grouse conservation policy and easements in Wyoming. PLoS ONE 8(6): e67261. doi:10.1371/journal.pone.0067261. Available at www.plosone.org/article/fetchObject.action?uri=info%3Adoi%2F10.1371%2Fjournal.pone.0067261&representation=PDF.

- Modeling indicates that the Wyoming sage-grouse core area conservation strategy, fully applied, plus \$250 million invested in targeted conservation easements, would slow, but not stop projected sage-grouse population declines in the state. The Wyoming core area policy prohibits or restricts surface occupancy within 0.6 miles of sage-grouse leks, generally limits development to one site per 640 acres, and limits cumulative surface disturbance to 5 percent per 640 acres in core habitat.

Howe, K. B., P. S. Coates, D. J. Delehanty. 2014. Selection of anthropogenic features and vegetation characteristics by nesting Common Ravens in the sagebrush ecosystem. Condor 116: 35-49.

- The proximity of transmission lines was, among other factors, predictive of nest location for common ravens in/near sagebrush steppe. The research supports other findings that transmission lines subsidize ravens, a predator of sage-grouse.

Knick, S. T., S. E. Hanser, K. L. Preston. 2013. Modeling ecological minimum requirements for distribution of greater sage-grouse leks: implications for population connectivity across their western range, U.S.A. *Ecology and Evolution*, available at <http://onlinelibrary.wiley.com/doi/10.1002/ece3.557/pdf>.

- Sage-grouse require sagebrush-dominated landscapes containing minimal levels of anthropogenic disturbance. Ninety-nine percent of remaining active sage-grouse leks were in landscapes with less than 3 percent disturbance within 5 km of the lek, and 79 percent of the area within 5 km was in sagebrush cover.

Reisner, M. D., J. B. Grace, D. A. Pyke, P. S. Doescher. 2013. Conditions favouring *Bromus tectorum* dominance of endangered sagebrush steppe ecosystems. *Journal of Applied Ecology*, available at <http://onlinelibrary.wiley.com/doi/10.1111/1365-2664.12097/pdf>.

- Cattle grazing exacerbates cheatgrass (*Bromus tectorum*) dominance in sagebrush steppe by decreasing bunchgrass abundance, shifting and limiting bunchgrass composition, increasing gaps between perennial plants, and trampling biological soil crusts. Grazing was also not found to reduce cheatgrass cover, even at the highest grazing intensities.

Appendix B

Designate Priority Habitat to Conserve Sage-Grouse

Greater sage-grouse are a landscape species (Connelly et al. 2011a). Migratory populations have large annual ranges that can encompass >2,700 km² (1,042 mi²/667,184 ac) (Knick and Connelly 2011, *citing* Dalke et al. 1963; Schroeder et al. 1999; Leonard et al. 2000) (the species may use up to 2,500 mi² per population (Rich and Altman 2001)). Large-bodied birds are generally more strongly affected by habitat loss and fragmentation (Winter et al. 2006). Although conclusive data on minimum patch size is unavailable (Connelly et al. 2011a), conserving large expanses of sagebrush steppe is the highest priority to conserve sage-grouse (Aldridge et al. 2008; Connelly et al. 2011b; *see* Manier et al. 2013: 25-26).

Sage-grouse conservation plans should designate and manage large areas of priority sage-grouse habitat to conserve the species. Priority habitat is generally defined as “having the highest conservation value to maintaining sustainable Greater Sage-grouse populations” (BLM Memo 2010-071) and should include all active sage-grouse leks, and brood-rearing, transitional and winter habitats. “Priority habitat will be areas of high quality habitat supporting important sage-grouse populations, including those populations that are vulnerable to localized extirpation but necessary to maintain range-wide connectivity and genetic diversity” (BLM Memo 2010-071).

Prohibit/Minimize Disturbance in Priority Sage-Grouse Habitat

Prohibit new surface disturbance in priority sage-grouse habitat. Where new disturbance cannot be avoided (e.g., due to valid existing rights), (A) minimize impacts by limiting preexisting and permitted disturbance to one instance per section of sage-grouse habitat regardless of ownership, (B) with no more than three percent surface disturbance per section or priority area (SGNTT 2011: 8; Knick et al. 2013). Disturbances include but are not limited to highways, roads, transmission lines, substations, wind turbines, oil and gas wells, heavily grazed areas, range developments, severely burned areas, pipelines, landfills, mines, and vegetation treatments that reduce sagebrush cover. (C) Where possible, buffer active sage-grouse leks against surface disturbance or occupancy by 4 miles¹ (SGNTT 2011: 23).

- Identify and protect sage-grouse wintering areas in priority sage-grouse habitat (Braun et al. 2005, *citing* Connelly et al. 2000 and others; Moynahan et al. 2007).
- Manage or restore sagebrush steppe in priority sage-grouse habitat so that at least 70 percent of the land cover is sagebrush sufficient to meet sage-grouse needs² (SGNTT 2011: 7; Knick et al. 2013³).⁴

¹ Smaller sage-grouse lek buffers may be justified where research demonstrates that most sage-grouse nests (i.e., > 90 percent) would be protected by the smaller buffer (see, e.g., Conservation Plan for Greater Sage-Grouse in Utah, unpublished: 9), although the impacts from continued and future land use (pursuant to valid existing rights) in nesting habitat would still advise adopting larger 4-mile lek buffers to conserve the species.

² While ≥ 70 percent of land cover is sagebrush, the remainder of the landscape should be naturally occurring habitat, including a mosaic of successional habitats progressing toward sagebrush steppe.

³ Seventy-nine percent of the area within 5 km of active sage-grouse leks was in sagebrush cover.

⁴ *See also* Karl and Sadowski (2005): 15.

Designate Restoration Habitat to Support Sage-Grouse Recovery

Designate restoration sage-grouse habitat to focus habitat restoration efforts to extend sage-grouse habitat and mitigate for future loss of priority habitat (BLM Memo MT-2010-017). Restoration habitat may be degraded or fragmented habitat that is currently unoccupied by sage-grouse, but might be useful to the species if restored to its potential natural community. Restoration habitat should be identified in management planning based on its importance to sage-grouse and the likelihood of successfully restoring sagebrush communities (Meinke et al. 2009; Wisdom et al. 2005a). Effective restoration requires a regional approach (e.g., sub/regional EISs) that identifies appropriate options across the landscape (Pyke 2011). Passive restoration is preferred for restoring these areas over active restoration methods.

Specially Designate Sagebrush Reserves for Sage-Grouse

Designate a subset of sage-grouse priority habitat areas as sagebrush reserves (e.g., Areas of Critical Environmental Concern (Bureau of Land Management), Zoological Areas (Forest Service),⁵ research natural areas (Bureau of Land Management, Forest Service), or similar administrative designations to be specially managed refugia for sage-grouse and other sagebrush-dependent species.⁶ Sagebrush reserves should encompass centers of sage-grouse abundance on the landscape and protect a sufficiently large proportion of habitat in each planning area to sustain biological processes, recover species and mitigate for the systematic effects of climate change, invasion by nonnative plants and unnatural fire.⁷ Sagebrush reserves should offer additional conservation benefits for sage-grouse and other sagebrush-dependent species over priority habitat. They may be withdrawn from locatable and leasable minerals development (43 U.S.C. § 1714); closed to new surface disturbance; and prioritized for grazing permit retirement and removal of infrastructure (unneeded oil and gas equipment, roads, range developments, fencing, etc.).

Manage Livestock Grazing to Maintain and Enhance Sage-Grouse Habitat

For range management, sage-grouse habitat objectives should be based on, in priority order, potential natural community within the applicable Ecological Site Description, Connelly et al. (2000: 977, Table 3), or other objectives that have been demonstrated to be associated with increasing sage-grouse populations.

Utilization levels should not exceed 25 percent annually on uplands, meadows, flood plains and riparian habitat (Holecheck et al. 2010; BLM & USFS 1994).⁸ Habitat objectives should be applied to all sage-grouse habitat areas.

⁵ The Sage-Grouse Recovery Alternative referred to specially designated areas on Forest Service lands as "Sagebrush Conservation Areas," p. 30 (www.sagebrushsea.org/pdf/Sage-Grouse_Recovery_Alternative.pdf).

⁶ More than 350 species of conservation concern occur in sagebrush steppe (Wisdom et al. 2005a: 21 and App. 2). Conservation planning for a suite of sagebrush species now could avoid land use conflicts in the future.

⁷ See Sage-Grouse Recovery Alternative for criteria for designating sagebrush reserves, p. 50 (www.sagebrushsea.org/pdf/Sage-Grouse_Recovery_Alternative.pdf).

⁸ "A community is considered to be at its natural potential when the existing vegetation is between 75-100 percent of the site's potential natural plant community." BLM & USFS 2004: 3-26.

Management plans should include three specific conservation measures:

1. Grazing should maintain ≥ 18 cm grass height in nesting and brooding-rearing habitat (Connelly et al. 2000; Braun et al. 2005).
2. Livestock grazing should be restricted where cheatgrass (*Bromus tectorum*) occurs in sagebrush steppe to avoid contributing further to its incursion on the landscape (Reisner et al. 2013).
3. Grazing permit retirement should be prioritized in sage-grouse habitat.

Mitigate for the Effects of Climate Change

Account for the effects of climate change in management planning (Secretarial Order 3289, 02-22-2010; CEQ Memo, 02-18-2010 (draft)). Climate change is a recognized threat to sage-grouse (Connelly et al. 2011b: 556, Table 24.2; Blomberg et al. 2012; van Kooten et al. 2007) that is also predicted to have deleterious impacts on sagebrush steppe (Schlaepfer et al. 2012; Neilson et al. 2005). Most climate change simulations predict sagebrush steppe will contract as mean temperatures increase and the frost line shifts northward (Blomberg et al. 2012; Neilson et al. 2005). In the worst case scenario, sagebrush species are simulated to contract to just 20 percent of current distribution (Wisdom et al. 2005b: 206, *citing* Neilson et al. 2005). The largest remaining areas will be in southern Wyoming and in the gap between the northern and central Rocky Mountains, followed by areas along the northern edge of the Snake River Plateau and small patches in Washington, Oregon and Nevada (*see* Miller et al. 2011: 181, Fig. 10.19). Sagebrush steppe may also shift northward in response to increased temperatures (Schlaepfer et al. 2012; Shafer et al. 2001).

Measures for ameliorating the effects of climate change on species and landscapes include increasing the size and number of protected areas, maintaining and enhancing connectivity between protected areas, and identifying and protecting areas likely to retain suitable climate/habitat conditions in the future (even if not currently occupied by the species of concern). Management should also repulse invasive species, sustain ecosystem processes and functions, and restore degraded habitat to enhance ecosystem resilience to climate change (Chester et al. 2012; NFWPCAS 2012).

Submitted via electronic mail to comments-intermtn-humboldt-toiyabe@fs.fed.us.

October 9, 2014

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RE: Comments on the Greater Sage-grouse Bi-state Distinct Population Segment Forest Plan Amendment Revised Draft Environmental Impact Statement for the Humboldt-Toiyabe National Forest, Bureau of Land Management Carson City District Office, and Bureau of Land Management Tonopah Field Office

Dear Supervisor Dunkelberger and Acting District Manager Holmstrom:

Please find the attached comments from Defenders of Wildlife ("Defenders") on the Greater Sage-grouse Bi-state Distinct Population Segment Forest Plan Amendment Revised Draft Environmental Impact Statement. Defenders is a national, non-profit, public interest conservation organization with more than one million members and supporters. Defenders has been substantively involved in greater sage-grouse conservation, including conservation of distinct population segments of the species.

Thank you for this opportunity to submit comments.

Sincerely,

A handwritten signature in black ink, appearing to read 'Lauren McCain', with a long horizontal line extending to the right.

Lauren McCain
Federal Lands Policy Analyst
Defenders of Wildlife

Greater sage-grouse (*Centrocercus urophasianus*) are a sagebrush obligate species whose range has been significantly reduced with the loss of sagebrush steppe. Sage-grouse are a landscape species that use a variety of sagebrush habitats throughout the year (Connelly et al. 2004; Connelly et al. 2011a). Large, interconnected areas of sagebrush steppe must be conserved if sage-grouse are to persist (Connelly et al. 2011b).

The Bi-State Distinct Population Segment of Greater Sage-Grouse ("sage-grouse" or "Bi-state DPS") is a genetically and geographically isolated sub-population (Oyler-McCance et al. 2005). Most remaining Bi-state DPS habitat is publicly owned, most of it managed by the federal government (Knick 2011). Historic patterns of land use, conflicting management policies and demand for resources on these lands have left little sagebrush steppe protected.

Although cooperation among many federal and state agencies and private landowners will be necessary to conserve sage-grouse and sagebrush habitat, the federal government and federal public lands are key to achieving these goals. Federal agencies must prioritize sagebrush conservation if sage-grouse are to persist (Connelly et al. 2011a).

Developing and implementing conservation strategies at regional or landscape scales will have the greatest benefit for sage-grouse and their habitat (*see* Doherty et al. 2011). Protecting large expanses of sagebrush steppe and current populations of greater sage-grouse are the highest priority (Connelly et al. 2011a; Wisdom et al. 2005b). Given the importance of public lands to sage-grouse conservation; the sensitivity of these lands to disturbance, longer recovery periods and variable response to restoration; and their susceptibility to invasion by exotic plants (Knick 2011), land uses that negatively affect these lands should be avoided or prohibited in key habitat areas to conserve sage-grouse habitat. Establishing a system of habitat reserves in sagebrush steppe will also help conserve essential habitat and ecological processes important to sage-grouse conservation.

The U.S. Fish and Wildlife Service ("USFWS") has proposed to list the Bi-state DPS as "threatened" under the Endangered Species Act ("ESA") (78 Fed. Reg. 64373). The USFWS estimated that a total of 1,833-7,416 birds are distributed across the 6 population management units (PMUs) in east-central California and southwestern Nevada (78 Fed. Reg. 64362). The population has declined by more than 50 percent from historic abundance and has lost more than half of its original range (78 Fed. Reg. 64373).

The Humbolt-Toiyabe National Forest ("HTNF") is amending its land and resource management plan in coordination with the Bureau of Land Management (BLM) Carson City District Office ("CCDO") and Tonopah Field Office ("TFO"), which are amending their resource management plans. This process is taking place under the Greater Sage-grouse Bi-state Distinct Population Segment Forest Plan Amendment Revised Draft Environmental Impact Statement (RDEIS). The RDEIS describes the purpose and need for the proposed action:

The purpose of the proposed amendment is to conserve, enhance, and/or restore sagebrush and associated habitats to provide for the long-term viability of the Bi-state DPS. This action is needed to address the recent "warranted, but precluded" Endangered Species Act listing, and to support Bi-state DPS population management objectives within the states of Nevada and California. Under the National Forest Management Act of 1976 (NFMA) and the Federal Land Policy and Management Act of 1976 (FLPMA), the Forest Plan and RMPs direct and guide

management of the national forest system and BLM lands and resources administered under them. All projects and activities must be consistent with the applicable forest plan or RMP. (RDEIS 8)

The HTNF, CCDO, and TFO together manage a significant proportion of the global Bi-State DPS. Segments of 5 out of 6 PMUs overlap with these federal lands—the Pine Nut, Mount Grant, Bodie, Desert Creek/Fales, and White Mountains PMUs.

The USFWS noted that the global population of bi-state sage-grouse is small and “below the theoretical minimum criteria for long-term persistence” (78 Fed. Reg. 64362). None of the individual PMU populations rise close to this persistence threshold. The Bodie (population estimate: 522-2,400) is 1 of only 2 populations the USFWS described as “relatively stable” (78 FR 64362), but it is hardly secure. The USFWS warned that “the Bodie and South Mono PMUs have experienced prior habitat losses, population declines, and internal habitat fragmentation. Significant connectivity between the populations within these two PMUs is currently lacking” (78 Fed. Reg. 64362) and “the Bodie PMU is expected to fall below 500 breeding adults within the next 30 years (Garton et al. 2011, p. 310)” (78 Fed. Reg. 64362-64363). The proposed listing rule also stated:

Declining Bi-State DPS population trends continue for the Pine Nut, Desert Creek-Fales, and Mount Grant PMUs, with an unknown trend for the White Mountains PMU [citation omitted]. These trends are of critical concern at the DPS level because fluctuations in these small, less secure populations are likely to result in extirpations and loss of population redundancy within the DPS. (78 FR 64362)

A study by Oyler-McCance et al. (2014) found genetic differentiation between the White Mountains PMU, the most southerly PMU, and the subpopulations to the north, supporting the notion that White Mountains subpopulation may be experiencing a detectable loss of genetic variation.

In its proposed listing rule, the USFWS concluded that “existing regulatory mechanisms are inadequate to protect the Bi-State DPS” (78 Fed. Reg. 64358). The agency expressed concern about federal land management plans:

Existing land use plans, as they pertain to sage-grouse, are typically general in nature and afford relatively broad latitude to land managers. This latitude influences whether measures available to affect conservation of greater sage-grouse are incorporated during decision making, and implementation is prone to change based on managerial discretion. While we recognize the benefits of management flexibility, we also recognize that such flexibility with regard to implementation of land use plans can result in land use decisions that negatively affect the Bi-State DPS. Therefore, we consider most existing Federal mechanisms offer limited certainty as to managerial direction pertaining to sage-grouse conservation, particularly as the Federal mechanisms relate to addressing the threats that are significantly impacting the Bi-State DPS... (78 FR 64372).

It is incumbent upon the HTNF and the CCDO to develop and implement conservation measures for sage-grouse that are biologically adequate and have sufficient regulatory authority to protect and recover the species.

Although the RDEIS for the HTNF-CCDO-TFO Amendment makes some advances in managing sage-grouse, the Preferred Alternative (modified Alternative B) falls short of conserving and restoring sage-grouse populations. The preferred alternative eschews designating and managing essential habitat for sage-grouse and would permit continued resource use and development that could harm the species.

Following are Defenders of Wildlife's comments on the adequacy of sage-grouse conservation measures in the RDEIS. The comments are based on our analysis of the RDEIS, presented in the Table that begins on page 10.

The Amendment should designate priority sage-grouse habitat.

Sage-grouse conservation plans should designate and manage large areas of priority sage-grouse habitat to conserve the species. Priority habitat is generally defined as "having the highest conservation value to maintaining sustainable Greater Sage-grouse populations" (BLM Memo 2010-071) and should include all active sage-grouse leks, and brood-rearing, transitional and winter habitats. "Priority habitat will be areas of high quality habitat supporting important sage-grouse populations, including those populations that are vulnerable to localized extirpation but necessary to maintain range-wide connectivity and genetic diversity" (BLM Memo 2010-071). The BLM and the Forest Service have identified millions of acres of priority habitat for greater sage-grouse in draft plans developed as part of the National Greater Sage-Grouse Planning Strategy (Salvo 2014, unpublished).

According to the USFWS's Greater Sage-grouse (*Centrocercus urophasianus*) Conservation Objectives: Final Report ("COT report"), "[w]ithin the Bi-State [sage-grouse range], all occupied habitat is considered PAC [Priority Area for Conservation]" (USFWS 2013a: 89). PACs should be managed to maintain, and improve degraded habitats to provide healthy intact sagebrush shrub and native perennial grass and forb communities, appropriate to the local ecological conditions, and to conserve all essential seasonal habitat components for sage-grouse" (USFWS 2013: 32). The COT report outlined objectives for managing and limiting threats on PACs (USFWS 2013: 36-40).

The BLM should designate a maximum amount of priority sage-grouse habitat to conserve the species by protecting remaining lek complexes and population centers (*see* Doherty et al. 2010; Knick and Hanser 2011). Appendix 2 of the RDEIS indicates that the BLM CCDO and TFO have designated and mapped priority habitat in their Bi-State Distinct Population Segment of Greater Sage-Grouse Interim Management Policies and Procedures. However, this information and directive was not carried over to the RDEIS. The USFS and BLM should outline policy prescriptions regarding designating priority habitat within the context of the NEPA process to develop the Amendment.

We recommend the Amendment identify and designate sage-grouse priority habitat or PACs in the planning areas based on the areas defined in the proposed listing rule as critical habitat for the Bi-state DPS (79 Fed. Reg. 31901).

Federal land management agencies should designate essential sage-grouse habitat as sagebrush reserves (e.g., Areas of Critical Environmental Concern (BLM), Zoological Areas (Forest Service), or

research natural areas (BLM, Forest Service) to be specially managed refugia for sage-grouse and other sagebrush-dependent species.¹ Sagebrush reserves should encompass centers of sage-grouse abundance on the landscape and protect a sufficiently large proportion of habitat in each planning area to sustain biological processes, recover species and mitigate for the systematic effects of climate change, invasion by nonnative plants and unnatural fire.² Sagebrush reserves should offer additional conservation benefits for sage-grouse and other sagebrush-dependent species over priority habitat. They may be withdrawn from locatable and leasable minerals development; closed to new surface disturbance; and prioritized for grazing permit retirement and removal of infrastructure (unneeded oil and gas equipment, roads, range developments, fencing, etc.).

The Bi-state Action Plan proposed the following recommendation related to establishing sage-grouse reserves:

Revise the Carson City District Consolidated RMP (Sierra Front and Stillwater Field Offices) to incorporate additional land use plan guidance specific to greater sage-grouse conservation (High Priority).

1. Consider Area of Critical Environmental Concern (ACECs) or other special designations, including mineral withdrawals, for the protection of known occupied and potential sage-grouse habitats in the Bi-State area.
2. Due to the relatively small and isolated nature of the Bi-State DPS, deference should be given to conservation of all extant populations of greater sage-grouse in the Bi-State area. (Bi-state Technical Advisory Team 2012: 85)

However, the USFS and BLM did not propose creating sage-grouse reserves in the Preferred Alternative or any other alternative outlined in the RDEIS.

The Amendment should cap anthropogenic surface disturbance in priority sage-grouse habitat.

Future land use and development should be restricted on public lands in priority habitat. The NTT report recommends excluding new rights-of-way, including wind energy development in priority habitat; withdrawing priority habitat areas from entry for locatable minerals; closing priority habitat to new fluid minerals leasing; finding unsuitable all surface coal mining in priority habitat; closing priority habitat to new non-energy fluid minerals leasing; closing priority habitat to mineral material sales; avoiding vegetation treatments that reduce sagebrush canopy cover below recommended minimums; and limiting motorized travel to designated roads, primitive roads, and trails in priority habitat (SGNTT 2011: 11-26). The COT report also recommends avoiding anthropogenic disturbances in key sage-grouse habitat (COT 2013: 32), including new infrastructure, energy development, and mining (COT 2013: 51, 43, 49). "It is imperative that no PACs are lost as a result of further infrastructure development or other anthropogenic impacts" (COT 2013: 37).

Disturbances identified in the NTT report include "paved highways, graded gravel roads, transmission lines, substations, wind turbines, oil and gas wells, geothermal wells and associated facilities, pipelines, landfills, homes and mines" (SGNTT 2011: 7-8). Planners should also consider heavily grazed areas, range developments and vegetation treatments that reduce sagebrush cover as

¹ More than 350 species of conservation concern occur in sagebrush steppe (Wisdom et al. 2005a: 21 and App. 2).

² See Sage-Grouse Recovery Alternative for criteria for designating sagebrush reserves, p. 50 (www.sagebrushsea.org/pdf/Sage-Grouse_Recovery_Alternative.pdf).

discrete disturbances. As the HTNF has observed, “[l]ivestock concentration can represent a discrete impact” in sage-grouse habitat (USDA Forest Service 2013). Holechek et al. (2004, citing others) described the effects of water developments on forage production and native bunchgrasses in Idaho, Montana and New Mexico, noting that nearly all forage is used around water developments, decreasing with increasing distance from water. They reported that, under moderate grazing intensities, forage production was most severely reduced in the zone 0.5 miles from water. Finally, as the Wyoming Greater Sage-Grouse Draft Land Use Plan Amendment and Draft Environmental Impact Statement recognized, vegetation treatments that reduce sagebrush cover below a certain threshold, rendering the habitat unsuitable for sage-grouse, should also be considered disturbance (Wyoming 2-181, Table 2-1).

The Preferred Alternative contains several standards and guidelines that prescribe eliminating or limiting several types of anthropogenic disturbance from sage-grouse habitat. Where new anthropogenic disturbance cannot be avoided (e.g., due to valid existing rights), impacts should be minimized by limiting discrete disturbance to one site per section of sage-grouse habitat (see SGNTT 2011: 23) affecting less than three percent of the land surface, regardless of ownership and including existing disturbance (SGNTT 2011: 7-8).³

The Amendment should designate priority sage-grouse habitat.

Sage-grouse conservation plans should designate and manage large areas of priority sage-grouse habitat to conserve the species. Priority habitat is generally defined as “having the highest conservation value to maintaining sustainable Greater Sage-grouse populations” (BLM Memo 2010-071) and should include all active sage-grouse leks, and brood-rearing, transitional and winter habitats. “Priority habitat will be areas of high quality habitat supporting important sage-grouse populations, including those populations that are vulnerable to localized extirpation but necessary to maintain range-wide connectivity and genetic diversity” (BLM Memo 2010-071). The BLM and the Forest Service have identified millions of acres of priority habitat for greater sage-grouse in draft plans developed as part of the National Greater Sage-Grouse Planning Strategy (Salvo 2014, unpublished).

According to the USFWS’s Greater Sage-grouse (*Centrocercus urophasianus*) Conservation Objectives: Final Report (“COT report”), “[w]ithin the Bi-State [sage-grouse range], all occupied habitat is considered PAC [Priority Area for Conservation]” (USFWS 2013a: 89). PACs should be managed to maintain, and improve degraded habitats to provide healthy intact sagebrush shrub and native perennial grass and forb communities, appropriate to the local ecological conditions, and to conserve all essential seasonal habitat components for sage-grouse” (USFWS 2013: 32). The COT report outlined objectives for managing and limiting threats on PACs (USFWS 2013: 36-40).

The BLM should designate a maximum amount of priority sage-grouse habitat to conserve the species by protecting remaining lek complexes and population centers (see Doherty et al. 2010; Knick and Hanser 2011). Appendix 2 of the RDEIS indicates that the BLM CCDO and TFO have

³ While the NTT report recommends limiting discrete anthropogenic disturbances to less than 3 percent of total sage-grouse habitat (SGNTT 2011: 7), even this prescription may be inadequate to conserve the species. Analysis by Knick et al. (2013) suggests that sage-grouse leks are largely abandoned as development reaches 3 percent of disturbance within 5 km of leks (see also Baruch-Mordo et al. 2013: 237, Figure B). In fact, data in Knick et al. (2013: 9, Figure C) suggest that the majority of leks were in landscapes with less than or equal to 0.5 percent anthropogenic disturbance.

identified priority habitat in their Bi-State Distinct Population Segment of Greater Sage-Grouse Interim Management Policies and Procedures. However, this information and directive was not carried over to the RDEIS. The USFS and BLM should designate priority habitat in the current planning process to guide sage-grouse conservation and recovery. We recommend the Amendment base sage-grouse priority habitat on the areas defined in the proposed listing rule as critical habitat for the Bi-state DPS (79 Fed. Reg. 31901).

The Amendment should designate sagebrush reserves to protect sage-grouse.

Federal land management agencies should designate essential sage-grouse habitat as sagebrush reserves (e.g., Areas of Critical Environmental Concern (BLM), Zoological Areas (Forest Service), or research natural areas (BLM, Forest Service) to be specially managed refugia for sage-grouse and other sagebrush-dependent species.⁴ Sagebrush reserves should encompass centers of sage-grouse abundance on the landscape and protect a sufficiently large proportion of habitat in each planning area to sustain biological processes, recover species and mitigate for the systematic effects of climate change, invasion by nonnative plants and unnatural fire.⁵ Sagebrush reserves should offer additional conservation benefits for sage-grouse and other sagebrush-dependent species over priority habitat. They may be withdrawn from locatable and leasable minerals development; closed to new surface disturbance; and prioritized for grazing permit retirement and removal of infrastructure (unneeded oil and gas equipment, roads, range developments, fencing, etc.).

The Bi-state Action Plan proposed the following recommendation related to establishing sage-grouse reserves:

Revise the Carson City District Consolidated RMP (Sierra Front and Stillwater Field Offices) to incorporate additional land use plan guidance specific to greater sage-grouse conservation (High Priority).

1. Consider Area of Critical Environmental Concern (ACECs) or other special designations, including mineral withdrawals, for the protection of known occupied and potential sage-grouse habitats in the Bi-State area.
2. Due to the relatively small and isolated nature of the Bi-State DPS, deference should be given to conservation of all extant populations of greater sage-grouse in the Bi-State area. (Bi-state Technical Advisory Team 2012: 85)

The USFS and BLM did not propose creating sage-grouse reserves in the Preferred Alternative or any other alternative outlined in the RDEIS. Both agencies should analyze and, where appropriate, designate sagebrush reserves to conserve sage-grouse as part of the current planning process.

The Amendment should manage vegetation to maintain sufficient residual cover in sage-grouse nesting and brood-rearing habitat.

Sagebrush steppe in the Great Basin region did not evolve with significant grazing pressure by large ungulates (Mack and Thompson 1982). Grazing management was identified as a threat to sage-grouse by three expert panels and in recent reviews (Connelly et al. 2011b: 555-556, Tables 24.1,

⁴ More than 350 species of conservation concern occur in sagebrush steppe (Wisdom et al. 2005a: 21 and App. 2).

⁵ See Sage-Grouse Recovery Alternative for criteria for designating sagebrush reserves, p. 50 (www.sagebrushsca.org/pdf/Sage-Grouse_Recovery_Alternative.pdf).

24.2). Federal government scientists suggested that “livestock grazing across the public lands of western landscapes has impacted and will continue to impact the quality of those habitats and their ability to support source populations of sagebrush bird species” (Rich et al. 2005: 592).

Decades of livestock grazing have altered plant communities and soil and reduced productivity in sagebrush steppe (Knick et al. 2003; West 1983; Braun 1998; Dobkin et al. 1998; Knick et al. 2005). Stock animals remove native vegetation and spread invasive species in sagebrush steppe (Mack and Thompson 1982; Braun 1998; Dobkin et al. 1998; Miller and Eddleman 2000; Knick et al. 2005; Reisner et al. 2013). Livestock grazing reduces water infiltration rates (Braun 1998: 147; Dobkin et al. 1998: 213). These impacts change the proportions of shrubs, grasses, and forbs in affected areas and also increase the propensity for invasion by nonnative invasive plant species (Mack and Thompson 1982: 761; Miller and Eddleman 2000: 19; Knick et al. 2011: 232; Reisner et al. 2013: 10).

Cattle or sheep grazing in sage-grouse nesting and brood-rearing habitat can negatively affect habitat quality; nutrition for gravid hens; clutch size; nesting success; and/or chick survival (Connelly and Braun 1997; Beck and Mitchell 2000; Barnett and Crawford 1994; Coggins 1998; Aldridge and Brigham 2003). Livestock may directly compete with sage-grouse for grasses, forbs and shrub species; trample vegetation and sage-grouse nests; disturb individual birds and cause nest abandonment (Vallentine 1990; Pederson et al. 2003; Call and Maser 1985; Holloran and Anderson 2005; Coates 2007). Manier et al. (2013) reviewed the multiple effects of grazing on sage-grouse habitat.

The potential conflict between livestock grazing and sage-grouse intensifies near riparian and mesic habitats due to the importance of these areas to sage-grouse, particularly during brood-rearing and in summer. Heavy cattle grazing near springs, seeps, and riparian areas can remove grasses used for cover by grouse (Klebenow 1982). According to Call and Maser (1985:17), “rapid removal of forbs by livestock on spring or summer ranges may have a substantial adverse impact on young grouse, especially where forbs are already scarce.” USFWS (2013: 59) described the impacts of cattle and sheep grazing on food availability for sage-grouse:

Cattle feed mostly on grasses, but seasonally use forbs and shrubs like sagebrush (Vallentine 1990, p. 226). Domestic sheep consume large volumes of grass, shrubs (including sagebrush (Vallentine 1990, pp. 240–241)), and forbs in occupied sage-grouse habitat (Pederson *et al.* 2003, p. 43). Because forbs provide essential calcium, phosphorus, and protein for pre-laying hens (Barnett and Crawford 1994, p. 117), the absence of sufficient forbs can impact a hen’s nutritional condition, thus affecting nest initiation rate, clutch size, and subsequent reproductive success (Barnett and Crawford 1994, p. 117; Coggins 1998, p. 30). More specifically, livestock grazing can reduce the available food sources needed during breeding and brood-rearing periods (Braun 1987, p. 137; Dobkin 1995, p. 18; Connelly and Braun 1997, p. 231; Beck and Mitchell 2000, pp. 998–1,000). (USFWS 2013: 59)

Aldridge and Boyce (2007: 522), citing Manier and Hobbs (2006), suggested that removing cattle or reducing livestock intensity may result in increased shrub cover and/or plant diversity in shrubsteppe. They also suggested that eliminating water impoundments (such as earthen livestock watering holes) may allow water to recharge former mesic sites in sagebrush steppe, which would benefit sage-grouse (Aldridge and Boyce 2007: 523).

Sage-grouse management guidelines recommend that grazing maintain a minimum of 7 inches (18 cm) grass height in nesting and brood-rearing habitat (Connelly et al. 2000; Hagen et al. 2007; see also Braun et al. 2005 and Kaczor 2008). USFWS supports the 7-inch standard for the Bi-State DPS (BSSG Assessment 2013: 58-59). Gregg et al. (1994: 165) noted that “[l]and management practices that decrease tall grass and medium height shrub cover at potential nest sites may be detrimental to sage grouse populations because of increased nest predation. ... Grazing of tall grasses to <18 cm would decrease their value for nest concealment. ... Management activities should allow for maintenance of tall, residual grasses or, where necessary, restoration of grass cover within these stands.” Because sage-grouse nesting generally begins prior to the onset of the growing season, residual vegetation from the previous year dictates available hiding cover (Cagney et al. 2010). Consequently, management should ensure that grass height averages 7 inches after the growing season to support sage-grouse nesting the following year.

Holloran et al. (2005: 648) documented the importance of herbaceous cover, including residual grass, to sage-grouse nesting success and concluded that “annual grazing in nesting habitat, regardless of the timing, could negatively impact the following year’s nesting success [by reducing residual vegetation].” Tall, dense, vegetational cover provides scent, visual and physical barriers to predation on nesting sage-grouse hens, sage-grouse nests and chicks, and may enhance nest success (Gregg et al. 1994; Rebholz 2007; Herman-Brunson et al. 2009). Hagen et al. (2007) conducted a quantitative meta-analysis of existing research on greater sage-grouse nesting and brood-rearing habitat and confirmed that female sage-grouse typically select nesting sites with greater sagebrush cover and grass height compared to random locations, and that brood areas usually had less sagebrush, taller grasses, and greater forb and grass cover than at random sites. In a study of a sample of the Bi-State DPS in Mono County, Kolada et al. (2009a: 1345) found, “[s]age-grouse in Mono County selected nest sites with greater overall shrub canopy cover than what was available, both within 200 m of nests and at the subarea scale, suggesting that females attempted to maximize concealment of their nests under shrubs (Kolada et al. 2009[b]).” Hens also selected sites with a diversity of sagebrush and other shrubs (Kolada et al. 2009a; Kolada et al. 2009b).

The Preferred Alternative proposes a standard to: “Manage livestock grazing to maintain residual cover of herbaceous vegetation so as to reduce predation during breeding/nesting season (March 1 to June 30) within 3 miles of active lek sites” (26). However, the Preferred Alternative prescribes no residual cover height standards. The Preferred Alternative relies on allotment permitting and range utilization standards (B-RP-S-01, p. 26; B-RU-S-02, p. 26) to set limits on grazing instead of sage-grouse habitat condition standards. We recommend that the final Alternative prescribe vegetation management that would achieve the 7 inch minimum cover standard.

The Amendment should set standards to prevent cheatgrass incursion in sage-grouse habitat.

Experts have not found an effective method for removing cheatgrass from sagebrush steppe where the non-native weed occurs. Cheatgrass degrades sage-grouse habitat. Sage-grouse habitat should be managed to promote conditions least likely to allow cheatgrass from spreading on the landscape. This may involve eliminating or limiting livestock grazing in areas where encroachment is a risk. Livestock grazing and fire are also not effective tools to reduce cheatgrass, and both can exacerbate the problem. Burned areas should be planted with native plant seed to the extent available.

Reisner et al. (2013) found that, even after controlling for other factors that may contribute to the spread of cheatgrass, there was a strong correlation between grazing and cheatgrass incursion.

If the goal is to conserve and restore resistance of [big sagebrush] systems, managers should consider maintaining or restoring: (i) high bunchgrass cover and structure characterized by spatially dispersed bunchgrasses and small gaps between them; (ii) a diverse assemblage of bunchgrass species to maximize competitive interactions with *B. tectorum* in time and space; and (iii) biological soil crusts to limit *B. tectorum* establishment. Passive restoration by reducing cumulative cattle grazing may be one of the most effective means of achieving these three goals. (Reisner et al. 2013: 1)

The use of livestock to control cheatgrass is also not recommended, as the Bureau of Land Management noted in the Idaho and Southwestern Montana Greater Sage-Grouse Draft Land Use Plan Amendment and Environmental Impact Statement:

Intensive livestock grazing is often suggested for controlling cheatgrass competition. Although targeted grazing may have some applications for fuels management, it is not effective in reducing cheatgrass competition (Hempy-Mayer and Pyke 2008). During the short time when cheatgrass is highly palatable in the spring, a sufficient number of livestock cannot be concentrated on a small enough area to reduce the cheatgrass seed significantly or reduce cheatgrass seed lying on the soil surface. In addition, this type of grazing can be detrimental to remaining perennial grasses, opening the site up for further cheatgrass expansion in the future. (Idaho: 3-64 – 3-65)

Manier et al. (2013: 97), reviewing the literature, noted that resting areas from spring grazing helps restore herbaceous understory in sagebrush steppe.

We concur with the guideline in Preferred Alternative to not use fire “as a management tool in areas where there is threat of cheatgrass invasion” (B-Fire-G-06, p. 35). We also agree with the guideline, “[d]o not use fire as a management tool in areas where the risk of escaped fire could cause negative long-term impacts” (B-Fire-G-06, p. 36), included in the Preferred Alternative. We support the guideline to use native, weed-free seed, when available, for re-seeding burned areas (B-Wild-G-02, p. 25). We do not support the guideline, “[g]razing may be used to target removal of cheatgrass or other vegetation hindering Bi-state DPS objectives. Sheep, goats, or cattle may be used as long as the animals are intensely managed and removed when the utilization of desirable species reaches 35%” (B-Weed-G-01, p. 28), for the reasons cited above.

TABLE 1	
Science-Based Prescriptions	Preferred Alternative Prescriptions
<i>Designate Priority Habitat</i>	
<p>Sage-grouse conservation plans should designate and manage large areas of priority sage-grouse habitat to conserve the species. Priority habitat is generally defined as "having the highest conservation value to maintaining sustainable Greater Sage-grouse populations" (BLM Memo 2010-071) and should include all active sage-grouse leks, and brood-rearing, transitional and winter habitats. "Priority habitat will be areas of high quality habitat supporting important sage-grouse populations, including those populations that are vulnerable to localized extirpation but necessary to maintain range-wide connectivity and genetic diversity" (BLM Memo 2010-071).</p> <p>Greater sage-grouse are a landscape species (Connolly et al. 2011a). Migratory populations have large annual ranges that can encompass >2,700 km² (1,042 mi²/667,184 ac) (Knick and Connolly 2011, <i>citing</i> Dalke et al. 1963; Schroeder et al. 1999; Leonard et al. 2000) (the species may use up to 2,500 mi² per population (Rich and Aluman 2001)). Large-bodied birds are generally more strongly affected by habitat loss and fragmentation (Winter et al. 2006). Although conclusive data on minimum patch size is unavailable (Connolly et al. 2011a), conserving large expanses of sagebrush steppe is the highest priority to conserve sage-grouse (Aldridge et al. 2008; Connolly et al. 2011b; <i>see</i> Manier et al. 2013: 25-26).</p>	<p>The Preferred Alternative states two goals the mention priority habitat:</p> <ul style="list-style-type: none"> • Bi-state DPS priority habitat and movement corridors are managed to bring vegetation communities to their ecological site potential and to maintain or increase the species (19); and, • In priority habitat, fuels treatments are used as a management tool when the benefits to Bi-state DPS clearly outweigh the risks; otherwise fire is suppressed in priority habitat after life and property. (19) <p>None of the RDEIS alternatives define, describe, or explain the concept of "priority habitat" as it pertains to the planning area or sage-grouse habitat within the planning area.</p>
<i>Cap Surface Disturbance</i>	
<p>Where new anthropogenic disturbance cannot be avoided (e.g., due to valid existing rights), impacts should be minimized by limiting discrete disturbance to:</p> <p>a) one site per section of priority habitat (see SGNTT 2011: 23) and b) less than three percent of the land surface, regardless of ownership and including existing disturbance (SGNTT 2011: 7-8).</p> <p>Disturbances identified in the NTT report include "paved highways, graded gravel roads, transmission lines, substations, wind turbines, oil and gas wells, geothermal wells and associated facilities, pipelines, landfills, homes and mines" (SGNTT 2011: 7-8). Planners should also consider heavily grazed areas, range developments and vegetation treatments that reduce sagebrush cover as discrete disturbances. The Humboldt-Toiyabe National Forest has observed that "[l]ivestock concentration can represent a discrete impact" in sage-grouse habitat (USDA Forest Service 2013). Holechek et al. (2004, <i>citing</i> others) described the effects of water developments on forage production and native bunchgrasses in</p>	<p>Preferred Alternative B does not prescribe surface disturbance caps for discrete anthropogenic disturbance in sage-grouse habitat. The Preferred Alternative does not include However, the Preferred Alternative includes several standards and guidelines to eliminate or minimize disturbance in the plan area.</p>

<p>Idaho, Montana and New Mexico, noting that nearly all forage is used around water developments, decreasing with increasing distance from water. They reported that, under moderate grazing intensities, forage production was most severely reduced in the zone 0.5 miles from water. Finally, as the Wyoming Greater Sage-Grouse Draft Land Use Plan Amendment and Draft Environmental Impact Statement recognized, vegetation treatments that reduce sagebrush cover below a certain threshold, rendering the habitat unsuitable for sage-grouse, should also be considered disturbance (Wyoming 2-181, Table 2-1).</p>	
<p><i>Establish Protective Lek Buffers</i></p> <p>Anthropogenic disturbance and occupancy should be prohibited near sage-grouse leks and in associated nesting and brood-rearing habitat, where possible. Coates et al. (2013: 1604) recommended buffering Bi-State sage-grouse leks by 4.7 miles (7.5km), which encompassed most sage-grouse habitat use throughout the year. Sage-grouse breeding sites and associated nesting and brood-rearing habitat are especially important to the species' life cycle. The grouse have high fidelity to leks and most hens will nest within four miles of the lek where they mated (SGNTT 2011: 21, Table 1). Nesting success, which is key to population growth, is higher in relatively unaltered habitat compared to altered habitat (Connelly et al. 2011a). Anthropogenic disturbance and disruptive activities, noise, and habitat degradation in breeding, nesting and brood-rearing habitats can influence sage-grouse productivity (Connelly et al. 2011a; Holloran 2005; Patricelli et al. 2013; Lyon and Anderson 2003). Coates et al. (2013: 1599) summarized impacts related to surface use in sage-grouse habitat:</p> <p>Sage-grouse populations may be affected by increased prevalence of anthropogenic structures in sagebrush habitats (Johnson et al. 2011, Wisdom et al. 2011). Research suggests that infrastructure associated with anthropogenic development may have adverse effects on sage-grouse populations. Such effects include avoidance of leks near structures (Lyon and Anderson 2003, Holloran 2005), decreased adult survival rates (Kaiser 2006, Aldridge and Boyce 2007), decreased nest survival (Braun 1998), lower lek attendance (Harju et al. 2010), loss of habitat (Connelly et al. 2000, Walker et al. 2007), increased avian predation (Ellis 1984, Braun 1998), displacement of nests (Braun et al. 2002), and increased mortality from fence collision (Stevens et al. 2012). Collisions with meteorological towers have also been observed (Coates et al. 2011).</p> <p>Coates et al. (2013: 1605 and others) advise against implementing only seasonal</p>	<p>Two standards in the Preferred Alternative prescribe 4 mile lek buffers:</p> <ul style="list-style-type: none"> • B-AR-S-03: Between March 1 and May 15, off-highway vehicle events that pass within a 0.25 mile of an active lek shall only take place during daylight hours after 10 am. (20) • C-LUSU-S-04: Do not install structures or powerlines taller than the surrounding vegetation that could serve as predator perches within 4 miles of an active lek. (21) <p>The following standards in the Preferred Alternative prescribe smaller lek buffers:</p> <ul style="list-style-type: none"> • B-RI-S-03: No new structures taller than the dominant surrounding vegetation that could serve as predator perches shall be installed within 2 miles of a lek. (27) • B-RI-S-08: Livestock watering and handling facilities (corrals, chutes, dipping vats, etc.) or sheep bedding grounds shall not be located within 2 miles of an active lek and 0.6 miles from riparian areas. (28) • B-RI-S-09: Salting or supplemental feeding stations shall not be located within 2 miles of an active lek and 0.6 miles from riparian areas. (28) • B-AR-S-03: Between March 1 and May 15, off-highway vehicle events that pass within a 0.25 mile of an active lek shall only take place during daylight hours after 10 am. (20) <p>The following guideline in the Preferred Alternative pertains to lek buffers:</p> <ul style="list-style-type: none"> • B-RI-G-01: To the extent possible, do not install fences unless to protect habitat or for human health and safety. If fences must be installed, they should be at least 2 miles from active leks, and if possible, should be let-down fences when not needed for the purpose of their installation. (27)

<p>restrictions on disturbance in sage-grouse breeding, nesting and brood-rearing habitat (i.e., when the grouse are present) because impacts will continue to affect sage-grouse in the succeeding years.</p>	
<p>Maintain Residual Grass Cover in Nesting and Brood-rearing Habitat</p> <p>Sage-grouse management guidelines recommend that grazing maintain a minimum of 7 inches (18 cm) grass height in nesting and brood-rearing habitat (Connelly et al. 2000; Hagen et al. 2007; <i>see also</i> Braun et al. 2005 and Kaczor 2008). USFWS supports the 7-inch standard for the Bi-State DPS (BSSG Assessment 2013: 58-59). Gregg et al. (1994: 165) noted that "[...]and management practices that decrease tall grass and medium height shrub cover at potential nest sites may be detrimental to sage grouse populations because of increased nest predation. ... Grazing of tall grasses to <18 cm would decrease their value for nest concealment. ... Management activities should allow for maintenance of tall, residual grasses or, where necessary, restoration of grass cover within these stands." Because sage-grouse nesting generally begins prior to the onset of the growing season, residual vegetation from the previous year dictates available hiding cover (Cagney et al. 2010). Consequently, management should ensure that grass height averages 7 inches after the growing season to support sage-grouse nesting the following year.</p>	<p>Preferred Alternative includes a standard that livestock grazing should be managed between March 1 – June 30 to "maintain residual cover" (B-RU-S-01, p. 26). The Alternative does not include a height standard for residual cover.</p>
<p>Prevent Cheatgrass Incursion in Sage-Grouse Habitat</p> <p>Reisner et al. (2013) found that, even after controlling for other factors that may contribute to the spread of cheatgrass, there was a strong correlation between grazing and cheatgrass incursion. The use of livestock to control cheatgrass is also not recommended, as the Bureau of Land Management noted in the Idaho and Southwestern Montana Greater Sage-Grouse Draft Land Use Plan Amendment and Environmental Impact Statement:</p> <p>Intensive livestock grazing is often suggested for controlling cheatgrass competition. Although targeted grazing may have some applications for fuels management, it is not effective in reducing cheatgrass competition (Hempy-Mayer and Pyke 2008). During the short time when cheatgrass is highly palatable in the spring, a sufficient number of livestock cannot be concentrated on a small enough area to reduce the cheatgrass seed significantly or reduce cheatgrass seed lying on the soil surface. In addition, this type of grazing can be detrimental to remaining perennial grasses, opening the site up for further cheatgrass expansion in the future. (Idaho: 3-64 – 3-65)</p>	<p>The Preferred Alternative includes the guideline, "Grazing may be used to target removal of cheatgrass or other vegetation hindering Bi-state DPS objectives. Sheep, goats, or cattle may be used as long as the animals are intensely managed and removed when the utilization of desirable species reaches 35%" (B-Weed-G-01, p. 26).</p>

<p>Manier et al. (2013: 97), reviewing the literature, noted that resting areas from spring grazing helps restore herbaceous understory in sagebrush steppe.</p>		
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